

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed May 16, 2005. Claims 1-7 and 9-18 remain pending in the present application. Reconsideration and allowance of the application and pending claims are respectfully requested.

#### **1. Response To Rejections of Claims 1-4 and 9-14 Under 35 U.S.C. §102**

Claims 1-4 and 9-14 have been rejected under 35 U.S.C. §102(b) as being anticipated by *Kawamura* (U.S. Patent No. 6,310,639). Applicants respectfully traverse this rejection.

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed subject matter must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b). In the present case, not every feature of the claimed subject matter is represented in the *Kawamura* reference. Applicants discuss the *Kawamura* reference and Applicants' claims in the following.

##### **a. Claim 1**

As provided in independent claim 1, Applicants claim:

A structure comprising:  
a substrate having a thickness defined by a first surface and a generally opposing second surface;  
***a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate***  
and,  
***a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate,***  
wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is greater than a second width that is more distal to the first surface.

(Emphasis added).

Applicants respectfully submit that independent claim 1 is allowable for at least the reason that *Kawamura* does not disclose, teach, or suggest at least "a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate" and "a plurality of slots extending into the substrate from the

second surface and connecting with the trench to form a compound slot through the substrate," as recited and emphasized above in claim 1.

Rather, *Kawamura* discloses a print head with a "semi-conductor substrate 303 . . . that has an upper surface 305 that is coated with a support layer 307." The print head further includes an "orifice plate 311 [that] has a lower surface 313 that conformally rests atop the support layer." Col. 6, lines 11-26. As shown in Fig. 3, the trench 327 identified in the Office Action extends through the entirety of the thickness of the substrate 303. Further, the vias 321, 323 identified in the Office Action do not extend into the substrate 303, but rather, they extend through the coating or support layer 307. Thus, *Kawamura* fails to teach or suggest "a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate" and "a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate." As a result, *Kawamura* does not teach or suggest at least all of the claimed features of claim 1. Therefore, claim 1 is not anticipated by *Kawamura*, and the rejection should be withdrawn for at least this reason alone.

**b. Claims 2-4**

Because independent claim 1 is allowable over the cited art of record, dependent claims 2-4 (which depend from independent claim 1) are allowable as a matter of law for at least the reason that dependent claims 2-4 contain all the elements and features of independent claim 1. For at least this reason, the rejections of claims 2-4 should be withdrawn.

**c. Claim 9**

As provided in independent claim 9, Applicants claim:

A structure comprising:  
a substrate having a thickness and a first surface;  
***a trench having a first dimension and a second dimension with respect in the first surface, the trench extending through less than an entirety of the thickness of the substrate; and,***  
***a plurality of slots extending into the substrate from a second surface and connecting with the trench to form a compound slot through the substrate,*** wherein the first dimension of the trench is greater than the second dimension, and the plurality of slots are separated from each other via substrate material extending from the second surface.

(Emphasis added).

Applicants respectfully submit that independent claim 9 is allowable for at least the reason that *Kawamura* does not disclose, teach, or suggest at least "a trench having a first dimension and a second dimension with respect in the first surface, the trench extending through less than an entirety of the thickness of the substrate" and "a plurality of slots extending into the substrate from a second surface and connecting with the trench to form a compound slot through the substrate," as recited and emphasized above in claim 1.

Rather, *Kawamura* discloses a print head with a "semi-conductor substrate 303 . . . that has an upper surface 305 that is coated with a support layer 307." The print head further includes an "orifice plate 311 [that] has a lower surface 313 that conformally rests atop the support layer." Col. 6, lines 11-26. As shown in Fig. 3, the trench 327 identified in the Office Action extends through the entirety of the thickness of the substrate 303. Further, the vias 321, 323 identified in the Office Action do not extend into the substrate 303, but rather, they extend through the coating or support layer 307. Thus, *Kawamura* fails to teach or suggest "a trench having a first dimension and a second dimension with respect in the first surface, the trench extending through less than the entirety of the thickness of the substrate" and "a plurality of slots extending into the substrate from a second surface and connecting with the trench to form a compound slot through the substrate." As a result, *Kawamura* does not teach or suggest at least all of the claimed features of claim 9. Therefore, claim 9 is not anticipated by *Kawamura*, and the rejection should be withdrawn for at least this reason alone.

**d. Claims 10-14**

Because independent claim 9 is allowable over the cited art of record, dependent claims 10-14 (which depend from independent claim 9) are allowable as a matter of law for at least the reason that dependent claims 10-14 contain all the elements and features of independent claim 9. For at least this reason, the rejections of claims 10-14 should be withdrawn.

**2. Response To Rejections of Claims 1-7 and 9-18 Under 35 U.S.C. §102**

Claims 1-7 and 9-18 have been rejected under 35 U.S.C. §102(e) as being anticipated by *Buswell* (U.S. Patent No. 6,666,546). Applicants respectfully traverse this rejection.

In the present case, not every feature of the claimed subject matter is represented in the *Buswell* reference. Applicants discuss the *Buswell* reference and Applicants' claims in the following.

a. **Claim 1.**

As provided in independent claim 1, Applicants claim:

A structure comprising:  
a substrate having a thickness defined by a first surface and a generally opposing second surface;  
a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate; and,  
a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate,  
***wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is greater than a second width that is more distal to the first surface.***

(Emphasis added).

Applicants respectfully submit that independent claim 1 is allowable for at least the reason that *Buswell* does not disclose, teach, or suggest at least the feature "wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is greater than a second width that is more distal to the first surface," as recited and emphasized above in claim 1.

Rather, *Buswell* discloses a print head with a terminal region of an ink feed slot 505 having a first width proximate to the first surface (312b) that is the same or less than a second width that is more distal to the first surface (312b). See, e.g., Fig. 5c. For example, Applicants note that the width of the central region of slot 503a, 504a, 505a in Fig. 5c is uniform. Further, a width of the terminal regions 503c, 504c, 505c proximate to the first surface (312b) is less than another width that is more distal to the first surface (312b). Thus, *Buswell* fails to teach or suggest "wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is greater than a second width that is more distal to the first surface." As a result, *Buswell* does not teach or suggest at least all of the claimed features of claim 1. Therefore, claim 1 is not anticipated by *Buswell*, and the rejection should be withdrawn for at least this reason alone.

**b. Claims 2-4 and 17-18**

Because independent claim 1 is allowable over the cited art of record, dependent claims 2-4 and 17-18 (which depend from independent claim 1) are allowable as a matter of law for at least the reason that dependent claims 2-4 and 17-18 contain all the elements and features of independent claim 1. For at least this reason, the rejections of claims 2-4 and 17-18 should be withdrawn.

**c. Claim 5**

As provided in independent claim 5, Applicants claim:

A structure comprising:  
a substrate having a thickness defined by a first surface and a generally opposing second surface;  
a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate; and,  
a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate, wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is less than a second width that is more distal to the first surface, and ***the plurality of slots are separated from each other via substrate material extending from the second surface***

(Emphasis added).

Applicants respectfully submit that independent claim 5 is allowable for at least the reason that *Buswell* does not disclose, teach, or suggest at least the feature of "the plurality of slots [being] separated from each other via substrate material extending from the second surface," as recited and emphasized above in claim 5.

Rather, *Buswell* discloses a print head with slots 503, 504, 505 with contiguous terminal portions 503b, 503c. *See, e.g.,* Fig. 5. Thus, *Buswell* fails to teach or suggest "the plurality of slots [being] separated from each other via substrate material extending from the second surface." As a result, *Buswell* does not teach or suggest at least all of the claimed features of claim 5. Therefore, claim 5 is not anticipated by *Buswell*, and the rejection should be withdrawn for at least this reason alone.

**d. Claims 6-7**

Because independent claim 5 is allowable over the cited art of record, dependent claims 6-7 (which depend from independent claim 5) are allowable as a matter of law for at least the reason that dependent claims 6-7 contain all the elements and features of

independent claim 5. For at least this reason, the rejections of claims 6-7 should be withdrawn.

e. **Claim 9**

As provided in independent claim 9, Applicants claim:

A structure comprising:  
a substrate having a thickness and a first surface;  
a trench having a first dimension and a second dimension with respect  
in the first surface, the trench extending through less than an entirety of the  
thickness of the substrate; and,  
a plurality of slots extending into the substrate from a second surface  
and connecting with the trench to form a compound slot through the substrate,  
wherein the first dimension of the trench is greater than the second dimension,  
and *the plurality of slots are separated from each other via substrate  
material extending from the second surface.*

(Emphasis added).

Applicants respectfully submit that independent claim 9 is allowable for at least the reason that *Buswell* does not disclose, teach, or suggest at least the feature of "the plurality of slots [being] separated from each other via substrate material extending from the second surface," as recited and emphasized above in claim 9.

Rather, *Buswell* discloses a print head with slots 503, 504, 505 with contiguous terminal portions 503b, 503c. *See, e.g., Fig. 5.* Thus, *Buswell* fails to teach or suggest "the plurality of slots [being] separated from each other via substrate material extending from the second surface." As a result, *Buswell* does not teach or suggest at least all of the claimed features of claim 9. Therefore, claim 9 is not anticipated by *Buswell*, and the rejection should be withdrawn for at least this reason alone.

f. **Claims 10-16**

Because independent claim 9 is allowable over the cited art of record, dependent claims 10-16 (which depend from independent claim 9) are allowable as a matter of law for at least the reason that dependent claims 10-16 contain all the elements and features of independent claim 9. For at least this reason, the rejections of claims 10-16 should be withdrawn.

***CONCLUSION***

For at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned agent at (770) 933-9500.

Respectfully submitted,

  
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